

# Notice of Allowability

Application No.

10/660,666

Examiner

Alexander O Williams

Applicant(s)

TAKAOKA, KEIJI

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2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the election filed 10/4/04.
2. ☒ The allowed claim(s) is/are 14-20; renumbered 1-7 respectively.
3. ☒ The drawings filed on 12 September 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☒ Certified copies of the priority documents have been received in Application No. 10/077434
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

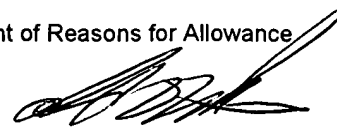
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 9/12/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

  
Alexander O Williams  
Primary Examiner  
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Serial Number: 10/660666 Attorney's Docket #: 242312US2SRD DIV  
Filing Date: 9/12/03; claimed foreign priority to //9

Applicant: Takaoka

Examiner: Alexander Williams

Applicant's Pre-Amendment (filed 9/12/03) is acknowledged.

Applicant's election of the species of figure 7, claims 14-20 filed 10/4/04 has been acknowledged.

Claims 14 to 20 are allowable over the prior art of record.

Claims 1 to 13 have been cancelled.

### **REASON FOR ALLOWANCE**

1. The following is an Examiner's Statement of Reasons for Allowance:

As to independent claim 14, the prior art of record fails to show the combination recited in any of the claims. In particular, the prior art of record fails to show or collectively teach an optical transmission module comprising: a resonant-cavity light-emitting diode, said resonant-cavity light-emitting diode including: a substrate having a first main surface and a second main surface which are substantially parallel to each other, a first semiconductor distributed Bragg reflector mirror layer formed on said first main surface of said substrate, a semiconductor light-emitting layer formed over said first semiconductor distributed Bragg reflector mirror layer, a second semiconductor distributed Bragg reflector mirror layer formed over said semiconductor light emitting layer, a light extraction section which is formed on said second semiconductor distributed Bragg reflector mirror layer and has an opening to extract light from said semiconductor light-emitting layer, a first electrode formed around said light extraction section on said second semiconductor distributed Bragg reflector mirror layer, a second electrode formed on said second main surface of said substrate, and a reflector portion provided on an inner wall of a groove, said groove being formed by removing portions of said first semiconductor distributed Bragg reflector mirror layer, said semiconductor light-emitting layer and said second semiconductor distributed Bragg reflector mirror

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layer which lie in a peripheral portion of said first electrode and formed to penetrate through each of said semiconductor light-emitting layer and said second semiconductor distributed Bragg reflector mirror layer and reach said first semiconductor distributed Bragg reflector mirror layer, said reflector portion being formed to reflect part of light emitted from said semiconductor light-emitting layer into said groove: and an optical fiber on which light from said light extraction section and said groove of said resonant cavity light-emitting diode is incident.

Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably **accompany** the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Field of Search	Date
U.S. Class and subclass: 257/98,95,91,45,46,49,184,185,189,458,12,21,656,335, 328,183,191,200,25,96,103,104,25 359/344 372/50,20,23,96,102,92,96,45,99,49	12/9/04
Other Documentation: foreign patents and literature in 257/98,95,91,45,46,49,184,185,189,458,12,21,656,335, 328,183,191,200,25,96,103,104,25 359/344 372/50,20,23,96,102,92,96,45,99,49	12/9/04
Electronic data base(s): U.S. Patents EAST	12/9/047

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander O Williams whose telephone number is (571) 272 1924. The examiner can normally be reached on M-F 6:30-7:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272 1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alexander O Williams  
Primary Examiner  
Art Unit 2826

AOW  
12/9/04